



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,812	09/08/2003	Wolfgang Danzer	038724.52699US	7094
23911 7590 07/11/2008 CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			EXAMINER ELVE, MARIA ALEXANDRA	
			ART UNIT 3742	PAPER NUMBER
			MAIL DATE 07/11/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/656,812

Applicant(s)

DANZER, WOLFGANG

Examiner

M. Alexandra Elve

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,9,12 and 13 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,3,4,9,12 and 13 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 02 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/808)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

Art Unit: 3742

DETAILED ACTION

Oath/Declaration

It does not identify the foreign application for patent or inventor's certificate on which priority is claimed pursuant to 37 CFR 1.55, and any foreign application having a filing date before that of the application on which priority is claimed, by specifying the application number, country, day, month and year of its filing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrmann (USPAP 2004/0094522).

Herrmann discloses:

A process gas and a method of laser welding. Diode lasers may be used.

A process gas for use in **laser welding** with a laser beam focused onto the work piece to be welded. The inventive process gas comprises helium, **nitrogen**, and at least one of **carbon dioxide in an amount of up to 40% by volume**, and oxygen in an amount of up to 30% by volume. The gas may comprise not more than 85% by volume of helium. Also disclosed are methods of laser welding using the inventive process gas. The invention is suitable for laser welding of low-alloy steels and coated, especially zinc-coated steels.

In laser welding it is known to use inert protective gases, like helium or **argon**. Even nitrogen is used to some degree. Now and

Art Unit: 3742

then carbon dioxide, oxygen or hydrogen are also mixed in with argon or nitrogen.

Herrmann does not disclose the exact amount as instant claims; however, the prior art compositions closely approximate or overlap applicant's claimed composition. It has been held that one of ordinary skill in the art at the time of the invention would have considered the claimed compositions to have been obvious because close approximation or overlapping ranges in a composition is considered a prima facie case of obviousness. See *In re Malagari*, 182 USPQ 549, *Titanium Metals v. Banner* 227 USPQ 773, *In re Nehrenberg* 126 USPQ 383.

Claims 3 & 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrmann, as stated above and further in view of Goto (JP 410296472).

Herrmann does not teach a carbon dioxide volume of 45 to 85% and 55 to 80%.

Goto discloses laser welding of an aluminum tank having a gaseous shield of carbon dioxide and oxygen. The carbon dioxide ranges from 10% to 62%.

It would have been obvious to use the carbon dioxide amounts as taught by Goto in the Herrmann process because it is merely a variation of the gaseous shielding environment.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the carbon dioxide levels as taught by Goto in the Herrmann system because both are directed to welding using a shielding environment.

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herrmann and Goto, as stated above, and further in view of Mori et al. (USPN 6,399,915).

Herrmann and Goto do not teach the wavelength of the laser.

Mori et al. discloses a laser welding unit, which has a wavelength of 500 to 1064 nm. Semiconductor diode lasers may be used.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a laser wavelength, as taught by Mori et al. system because this is merely a standard laser parameter.

Response to Arguments

Applicant's arguments filed 4/9/08 have been fully considered but they are not persuasive.

Applicant argues that the "consisting essentially of" limitation in the claims precludes the presence of helium because it materially affects the basic and novel characteristic(s) of a welding process. The examiner respectfully disagrees for the following reasons:

The "consisting essentially of" language in the claim is noted. This term limits the claim to specified ingredients and those that do not affect the basic and novel characteristics of a composition. Ex parte Davis et al., 80 USPQ 448. When applicant contends that modifying components in the reference composition are excluded by the

Art Unit: 3742

recitation of "consisting essentially of" applicant has the burden of showing basic and novel characteristics of his composition i.e. a showing that the introduction of these components would materially change the characteristics of applicant's composition. In re De Lajarte. 143 USPQ 256.

Applicant has stated that the helium would materially affect the base and novel characteristic(s) of the welding process. However, there is no further discussion with respect to the effects the helium presence would have on the welding process. Furthermore, applicant's specification specifically teaches the use of helium. Applicant's abstract discloses:

The invention relates to a process gas for use during laser welding of nonferrous metallic workpieces with a laser beam focussed onto the workpiece to be welded and a laser diode as the laser beam source. According to the invention, the process gas contains at least carbon dioxide and/or oxygen. **The process gas can**, in addition to carbon dioxide and/or oxygen, also **contain** argon, nitrogen, helium and/or other precious gases.

Additionally, it is the examiner's understanding that helium is generally viewed as an "inert" gas in welding processes. This is further evidenced by Hildebrandt et al. (USPAP 2002/0038862A1). Hildebrandt et al. discloses:

The novel inert gas mixture for the laser welding of aluminum materials has a proportion of 45-70% of nitrogen (N₂) by volume, the remainder being helium (He). (abstract)

Consequently, the examiner respectfully does not agree with applicant's statement that consisting essentially of excludes helium because it materially affects the base and novel characteristic(s) of a welding process especially since helium is viewed as an "inert" welding gas.

Applicant argues that Goto teaches oxygen and because it is reactive it will affect the basic and novel characteristics. The examiner respectfully notes that the rejection has been taken out of context, because the rejection is over a combination of references and Goto is used merely to teach a specific carbon dioxide volume used in welding processes. Herrmann, the primary reference, has disclosed carbon dioxide amounts but not the precise range of the dependent claims. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, all the references are drawn to laser welding and the use of process gas. Herrmann teaches process gas and a method for laser welding, Goto teaches a method for laser welding of aluminum plated sheet and Mori et al. teaches a method and apparatus for quality welding.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is 571-272-1173. The examiner can normally be reached on 7:30-4:00 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu B. Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 7, 2008.

/M. Alexandra Elve/
Primary Examiner, Art Unit 3742